

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

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## PCT

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

(PCT Rule 43bis.1)

Date of mailing <i>(day/month/year)</i> 25 AUGUST 2004 (25.08.2004)	
Applicant's or agent's file reference PP04-0108	<b>FOR FURTHER ACTION</b> See paragraph 2 below
International application No. <b>PCT/KR2004/001068</b>	International filing date <i>(day/month/year)</i> <b>07 MAY 2004 (07.05.2004)</b>
Priority date <i>(day/month/year)</i> 27 MAY 2003 (27.05.2003)	
International Patent Classification (IPC) or both national classification and IPC  <b>IPC7 B01J 27/18</b>	
Applicant  <b>LG CHEM. LTD. et al</b>	

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application


**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea  Facsimile No. 82-42-472-7140	Authorized officer  YANG, In Soo  Telephone No. 82-42-481-5567
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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

national application No.

PCT/KR2004/001068

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2004/001068

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1 ~ 21	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1 ~ 21	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1 ~ 21	YES
	Claims	NONE	NO

**2. Citations and explanations :**

1) Reference is made to the following document.

D1= US 5380690 (China Petrochemical Corporation) 10 January 1995

2) The present invention relates to a hydrogen steam cracking catalyst, a method for preparing the same and a method for preparing light olefin by using the same.

The cited document D1 discloses a cracking catalyst for the production of light olefins which comprises clay, inorganic oxides, and zeolite.

3) Novelty and Inventive step [PCT Articles 33(2) and 33(3)]

D1 is similar to the present invention in that a catalyst for the production of light olefins is provided, and in that the catalyst exhibits higher thermal activity-stability and light olefin yields. However, D1 is different from the present invention in compositions of said catalyst: the catalyst in D1 includes  $\text{KMgPO}_4$ , while the catalyst in the present invention comprises clay, inorganic oxides, and zeolite. Thus the present invention is considered to be novel.

In the light of D1, there is no reasonable basis to believe the fact that the skilled person in the art could derive  $\text{KMgPO}_4$  from the catalyst compositions of D1. Accordingly, the technical feature of using  $\text{KMgPO}_4$  as a catalyst composition of the present invention cannot be readily invented by a person skilled in the art. Thus the present invention is considered to involve an inventive step.

4) Industrial applicability [PCT Articles 33(4)]

The present invention is considered to be industrially applicable.